

Serial No.: 10/790,986
Docket No.: 09792909-5828
Amendment dated November 1, 2007
Reply to the Office Action of May 2, 2007

REMARKS

A. Introduction

Claims 1-13 were pending and under consideration.

In the Office Action of May 2, 2007 ("the Office Action"), claims 1-13 were rejected as anticipated. The claims were also rejected as indefinite.

An objection was raised against Figures 6 and 7 for not including a label such as "Prior Art." The title and abstract were also objected to.

In response, the anticipation rejections are traversed, claims 5-8 have been cancelled, claims 9-12 have been amended to more clearly recite the general inventive concept, and claims 14-17 have been added. The scope of the original claims has not been altered. No new matter has been added.

B. Information Disclosure Statements

Applicant notes with appreciation the Examiner's indication that each of the references cited in the Information Disclosure Statements of December 28, 2005 and April 11, 2006 have been considered.

C. Objections

1. Drawings

The drawings were objected to because Figures 6 and 7 were not labeled "Prior Art." The drawings have been amended as suggested by the Examiner. As such, reconsideration and withdrawal of the objection are requested.

2. Specification

The disclosure has been objected to because of the following informalities: non-descriptive title. The title has been amended. As such, reconsideration and withdrawal of the objections are requested.

Serial No.: 10/790,986
Docket No.: 09792909-5828
Amendment dated November 1, 2007
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3. Abstract

The Abstract has been objected to because of the following informalities: exceeding 150 words. However, a review of the Abstract reveals that it contains less than 150 words. As such, reconsideration and withdrawal of the objections are requested.

D. Rejection under 35 USC §112

Claims 1-13 were objected to as indefinite based on language contained in independent claims 1, 9, and 13. Specifically, the Examiner objected to the claim language, "a high-order part extraction step of extracting a necessary high-order part by rounding off a result obtained in the operation step," as recited in independent claims 1, 9, and 13. The Examiner considered the language "mis-descriptive because the extraction means is done to perform extracting a high-order part of the rounded result, not rounding the result means extracting a high-order part." See the Office Action. However, the claims define the extraction means as "extracting a...part by rounding off a result." See Claims 1, 9, and 13. Contrary to the Examiner's interpretation, the extraction means involve rounding. As such, the claim language is definite and distinctly claims the subject matter of the present general inventive concept.

Accordingly, for at least the reason above, Applicants respectfully submit that independent claims 1, 9, and 13, as well as their respective dependent claims, are definite.

E. Rejection under 35 USC §102(b)

Claims 1-13 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,272,648 to Agrawal et al. (hereinafter "Agrawal"). The rejections are traversed.

With respect to independent claim 1, on pages 2 and 3 of the Office Action, the Examiner alleges that Agrawal discloses all of the limitations of the invention as recited in independent claim 1. In particular, the Examiner alleges that:

Agrawal discloses in Figures 1-5...high-order part extraction means for extracting a necessary high-order part by rounding off a result of the operation performed by the operation means (e.g. component 63 in Figure 3); difference calculation means for calculating the difference between the result of the operation performed by the operation means and the high-order part extracted by the high-order part extraction means (e.g.

Serial No.: 10/790,986
Docket No.: 09792909-5828
Amendment dated November 1, 2007
Reply to the Office Action of May 2, 2007

component 64 in Figure 3); and feedback means for adding, to a next input digital signal, the difference value calculated by the difference calculation means or a value obtained by performing a predetermined operation on the difference value calculated by the difference value calculation means (e.g. feedback as seen in Figure 3 wherein the error is feedback to the adder 62 through delay element 65 to the next sample).

See the Office Action, page 5. However, it is respectfully submitted that Agrawal does not disclose or teach all of the elements of the Applicants' invention as originally recited in independent claim 1.

In an attempt to reject the language "high-order part extraction means for extracting a necessary high-order part by rounding off a result of the operation performed by the operation means," the Examiner merely points to "component 63 in Figure 3." See the Office Action, Pages 4-5. In addition to the fact that Figure 3 does not sufficiently convey the manner in which element 63 operates to provide legitimate grounds for rejecting the recited language, Agrawal only describes that "[t]he output from the adder 62 is applied to a word length reduction circuit 63...[that] operates to provide the output signal Z_n by simply discarding the M least significant bits." See Agrawal, Col. 7, Lines 12-20. "Discarding" is nearly the opposite of "rounding." A rounded number has about the same value as the number you start with, but it is less exact, e.g., 11.3572 rounded off to two decimal places becomes 11.36. Inversely, discarding does not affect the remaining portion of the number, i.e., the remaining number is not rounded. As such, because component 63 merely discards "the M least significant bits," component 63 cannot be used for "extracting a necessary high-order part by rounding off a result of the operation performed by the operation means," as recited in independent claim 1.

In attempt to reject the language "difference calculation means for calculating the difference between the result of the operation performed by the operation means and the high-order part extracted by the high-order part extraction means," the Examiner merely points to "component 64 in Figure 3." See the Office Action, Page 5. In addition to the fact that Figure 3 does not sufficiently convey the manner in which element 64 operates to provide legitimate grounds for rejecting the recited language, Agrawal only describes component 64 as "a summing network 64 where [Z_n of N bits] are added to the output of the summer 62...[and]

Serial No.: 10/790,986
Docket No.: 09792909-5828
Amendment dated November 1, 2007
Reply to the Office Action of May 2, 2007

operates to provide the signal e(n) which is the instantaneous error introduced by circuit 63 and indicative of the least significant bits M." See Agrawal, Col. 7, Line 66-Col. 8, Line 5. Because component 64 merely "sums" or adds Zn of N bits to the output of 62, component 64 cannot be used for "calculating the difference between the result of the operation performed by the operation means and the high-order part extracted by the high-order part extraction means," as recited in independent claim 1.

In attempt to reject the language "feedback means for adding, to a next input digital signal, the difference value calculated by the difference calculation means or a value obtained by performing a predetermined operation on the difference value calculated by the difference value calculation means," the Examiner merely points to "feedback as seen in Figure 3 wherein the error is feedback to the adder 62 through delay element 65 to the next sample." See the Office Action, Page 5. In addition to the fact that Figure 3 does not sufficiently convey the manner in which element 65 operates to provide legitimate grounds for rejecting the recited language, Agrawal only describes component 65 as "a register for transferring the bits to be added to summer 62 at the proper level and time" See Agrawal, Col. 8, Lines 41-43. Because component 65 merely transfers bits, component 65 cannot be used for "feedback means for adding, to a next input digital signal, the difference value calculated by the difference calculation means or a value obtained by performing a predetermined operation on the difference value calculated by the difference value calculation means," as recited in independent claim 1.

Accordingly, because Agrawal does not disclose or teach all of the elements set forth in independent claim 1, independent claim 1 is patentably distinguishable over Agrawal, and withdrawal of this rejection and allowance of this claim are respectfully solicited. Likewise, claims 2-4, which depend from independent claim 1, and thus include all of the limitations of independent claim 1, are also patentable over Agrawal. The Examiner rejects independent claims 9 and 13 by merely referencing the grounds for rejecting independent claim 1. However, because the grounds for rejecting independent claim 1 are flawed, as pointed out above, the grounds cannot be used for rejecting independent claims 9 and 13. As such, withdrawal of these rejections and allowance of these claims are respectfully requested.

Serial No.: 10/790,986
Docket No.: 09792909-5828
Amendment dated November 1, 2007
Reply to the Office Action of May 2, 2007

F. New Claims

New claims 14-17 have been added. Support for the new claims can be found in the specification, for example, on Page 9, last paragraph through Page 10, second paragraph. New claims 14-17 recite features, which are not disclosed, taught, or suggested in the prior art of record.

Accordingly, it is respectfully submitted that new claims 14-17 do not present new matter and are allowable over the prior art of record, and allowance of these claims is earnestly solicited.

Serial No.: 10/790,986
Docket No.: 09792909-5828
Amendment dated November 1, 2007
Reply to the Office Action of May 2, 2007

G. Conclusion

It is respectfully submitted that a full and complete response has been made to the outstanding Office Action and, as such, there being no other objections or rejections, this application is in condition for allowance, and a notice to this effect is earnestly solicited.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided. This paragraph is intended to initiate communication with the Examiner. As such, communication resulting herefrom is deemed to be an "Applicant-Initiated Interview."

If any further fees are required in connection with the filing of this amendment, please charge the same to our Deposit Account No. 19-3140.

Respectfully submitted,
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